

CLAIM AMENDMENTS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1 1. (Currently Amended) A method of managing virtual routing forwarding
2 (VRF) tables at a provider edge (PE) ~~PE~~-router of a L3 virtual private network
3 (VPN), said PE router maintaining a VPN-IP master routing information base (RIB)
4 and a sub-RIB for each said VRF table, comprising ~~the steps of:~~
5 maintaining an import route target (ImpRT) tree comprising all ImpRT
6 attributes currently configured on said PE router;
7 modifying an ~~ImpRTi~~ ImpRT attribute of a ~~VRFi~~ VRF table;
8 searching said ImpRT tree for a match to said modified ImpRT ~~ImpRTi~~
9 attribute to identify a ~~VRFm~~ VRF table having said ~~ImpRTi~~ a matching ImpRT
10 attribute;
11 for peers supporting a route refresh feature, performing a route refresh
12 operation only when a said match is not found;
13 for peers that do not support the route refresh feature, maintaining rejected
14 routes in a rejected routes tree; and
15 ~~updating said VRFi table accordingly, using an association between each said~~
16 ~~VRF table and a respective sub-RIB~~

17 searching for routes in a sub-RIB associated with said VRF table; and
18 copying said routes from said sub-RIB into said VRF table based on all route
19 target attributes configured for said VRF table, including said modified ImpRT
20 attribute.

1 2. (Currently Amended) The method of claim 1, further comprising:
2 ~~wherein said ImpRT tree maintains~~
3 maintaining a list of all ImpRT attributes at a PE node with said ImpRT tree,
4 each ImpRT attribute being associated with all VRF tables that are currently
5 configured with said modified ImpRT ~~ImpRT~~-attribute.

1 3. (Currently Amended) The method of claim 1, further comprising:
2 ~~wherein said step of modifying comprises~~
3 adding said modified ImpRT ~~ImpRTi~~-attribute to said ~~VRFi~~ VRF table.

1 4. (Canceled)

1 5. (Currently Amended) The method of ~~claim 4~~ claim 3, further comprising:
2 updating said ImpRT tree to include an association between said modified
3 ~~ImpRTi~~ ImpRT attribute and said ~~VRFi~~ VRF table.

1 6-7. (Canceled)

1 8. (Currently Amended) The method of ~~claim 7~~ claim 1, further comprising:
2 adding said routes ~~Rm~~ to each VRF table in a routing database available at
3 said PE router.

1 9. (Currently Amended) The method of claim 2, wherein said ~~step of~~ searching
2 is performed through said master RIB.

1 10. (Previously Presented) The method of claim 9, wherein said master RIB
2 includes all routes in all VRF tables at said PE router and further includes all
3 routes that were filtered out at said PE router using ImpRT attributes.

1 11. (Currently Amended) The method of claim 1, further comprising:
2 ~~wherein said step of modifying comprises~~
3 removing said ImpRT ~~import route target ImpRTi~~ from said ~~VRFi~~ VRF table.

1 12. (Currently Amended) The method of claim 11, further comprising:
2 ~~wherein said step of updating comprises~~

3 parsing all routes in said ~~VRFi~~ VRF table and removing all routes from said
4 VRF table that no longer match said ImpRT ~~remaining import route targets~~ of said
5 ~~VRFi~~ VRF table.

1 13. (Previously Presented) The method of claim 12, further comprising:
2 deleting all routes that no longer match from the sub-RIB of said VRF table.

1 14. (Currently Amended) The method of claim 13, further comprising:
2 deleting in said master RIB every route ~~Rd~~ that no longer matches any
3 ImpRT attribute in said ImpRT tree.

1 15. (Canceled)

1 16. (Currently Amended) At a provider edge PE router, a tree data structure,
2 stored on a computer-readable storage medium, comprising, for each import route
3 target ImpRT attribute configured on said PE router,
4 a pointer to a virtual routing forwarding (VRF) table having said respective
5 ImpRT attribute, and
6 an association between each said VRF table and a respective sub-RIB,

7 wherein a route refresh operation is performed only ~~if~~when a match between a
8 modified ImpRT attribute and an attribute stored in the VRF table is not found,
9 and
10 for peers that do not support the route refresh feature, maintaining rejected
11 routes in a rejected routes tree.

1 17. (Canceled)

1 18. (Currently Amended) A tree data structure stored on a computer-readable
2 medium for enabling modification of virtual routing forwarding (VRF) tables at a
3 PE router, comprising, for each import route target ImpRT attribute configured on
4 said PE router,

5 a pointer to a VRF table with said respective ImpRT attribute, ~~and~~
6 an association between each said VRF table and a respective sub-RIB,

7 wherein a route refresh operation is performed only ~~if~~when a match between a
8 modified ImpRT attribute and an attribute stored in the VRF table is not found,
9 and
10 for peers that do not support the route refresh feature, maintaining rejected
11 routes in a rejected routes tree.